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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,389	10/25/2005	Kazuhito Hayakawa	061069-0317233	2767

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EXAMINER	
FREJD, RUSSELL WARREN	

ART UNIT	PAPER NUMBER
2128	

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10/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/554,389	Applicant(s) HAYAKAWA ET AL	
	Examiner Russell Frejd	Art Unit 2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10.25.05</u> | 6) <input type="checkbox"/> Other: _____ |

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Examination of Application #10/554,389

1. Claims 1-13 of application 10/554,389, filed on 25-October-2005 are presented for examination.

Claim Rejections under 35 U.S.C. § 112, 2nd Paragraph

2. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being vague and indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The following is a list of the specific rejections:

claim 1 / line 9 making the evaluation function which makes the evaluation function

1 / 5	in a production
2 / 2	for making for the production state • renewing
2 / 9	according to change of the optical
3 / 3	sensitivity parameter determined
3 / 4	state is included as
4 / 5	optical parameter a step
4 / 5	for making an evaluation function which makes an evaluation function
5 / 2	on a value of a table of
6 / 2	of the table of
7 / 1	a table of an amount of
7 / 2	is composed by combination
7 / 2-3	of a kind of
8 / 2	the kind of
8 / 2	one of Newton error
9 / 2	the kind of
10 / 2	can be taken in the
11 / 2	an amount of error is set up to each
12 / 2	state further provided

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12 / 3 error with change of the
12 / 4 based on the table of

Claim Rejections under 35 U.S.C. § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.

3.1 Claims 1-12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The invention claims a design method of an optical system using an evaluation function.

3.2 This claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to: 1) physically transform or reduce an article to a different state or thing; or 2) having the **final result** (not the steps) achieve or produce a: useful (specific, substantial, AND credible utility), concrete (assured, substantially repeatable/non-unpredictable), **and** tangible (real world/non-abstract, enabling usefulness to be realized) result. The Courts have found that subject matter that is not a practical application or use of an idea, a law of nature or a natural phenomenon is not patentable. As the Supreme Court has made clear, “[a]n idea of itself is not patentable,” *Rubber-Tip Pencil Co. v. Howard*, 20 U.S. (1 Wall.) 498, 507 (1874); taking several abstract ideas and manipulating them together adds nothing to the basic equation. In re Warmerdam, 31 USPQ2d 1754 (Fed. Cir. 1994).

3.3 Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather

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than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter provides for setting an initial value which sets up an optical parameter in a design state where a production error has not been taken into consideration, a step for making/renewing, where an optical parameter in a production is made by adding the production error to the optical parameter in the design state, or the production error of the optical parameter in an existing production state is renewed, a step for making the evaluation function which makes the evaluation function, and a step for performing optimization which determines an optimal optical parameter by optimizing the evaluation function. This produced result remains in the abstract and, thus, fails to achieve the required status of having real world value, because the claims are determined to be a mathematical algorithm, converting one set of numbers into another set of numbers, whereby the method does not manipulate appropriate subject matter, and thus cannot constitute a statutory process (MPEP Section 2106.02).

Claim Rejections under 35 U.S.C. § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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4.1 Claims 1 and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by Yabe, USP 6,895,334.

4.2 Yabe discloses:

Claim 1: a step for setting an initial value which sets up an optical parameter in a design state where a production error has not been taken into consideration [col. 4, lines 50-55], a step for making/renewing, where an optical parameter in a production is made by adding the production error to the optical parameter in the design state, or the production error of the optical parameter in an existing production state is renewed [col. 4, lines 55-62], a step for making the evaluation function which makes the evaluation function [col. 4, line 67], and a step for performing optimization which determines an optimal optical parameter by optimizing the evaluation function [col. 4, lines 62-65].

Claim 4: a step for setting an initial value which sets up a value in a design state as a value of an optical parameter [col. 4, lines 50-55], a step for setting a production state which sets up a value in the production state as a value of an optical parameter a step for making an evaluation function which makes an evaluation function in which a production state is a variable [col. 4, line 67], and a step for performing optimization which optimizes the evaluation function [col. 4, lines 62-65], wherein a value in the production state is set up by adding a predetermined amount of error to the value in the design state [col. 4, lines 54-55].

Claim Objections

5. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response Guidelines

6. A shortened statutory period for response to this action is set to expire **3 (three) months and 0 (zero) days** from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned (see MPEP 710.02, 710.02(b)).

6.1 **Any response to the Examiner in regard to this non-final action should be**

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directed to: Russell Frejd, telephone number (571) 272-3779, Monday-Friday from 0530 to 1400 ET, **or** the examiner's supervisor, Kamini Shah, telephone number (571) 272-2279. Inquires of a general nature or relating to the status of this application should be directed to the TC2100 Group Receptionist (571) 272-2100.

mailed to: Commissioner of Patents and Trademarks
P.O. Box 1450, Alexandria, VA 22313-1450

or faxed to: (571) 273-8300

Hand-delivered responses should be brought to the Customer Service Window, Randolph Building, 401 Dulany Street, Alexandria, VA, 22314.

Date: 29-September-2007

/Russell Frejd/
Primary Examiner AU 2128

**RUSSELL FREJD
PRIMARY EXAMINER**